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A STUDY OF EMPLOYMENT OPPORTUNITIES AND TRAINING NEEDS IN OFF-FARM AGRICULTURAL OCCUPATIONS IN OKLAHOMA.

BY- STEVENSON, WILLIAM W.

OKLAHOMA STATE BOARD OF VOCAT. EDUC., STILLWATER

OKLAHOMA STATE UNIV., STILLWATER, AGRIC.-APPL.SCI.

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THE PURPOSE OF THE STUDY WAS TO IDENTIFY PRESENT AND EMERGING OFF-FARM AGRICULTURAL OCCUPATIONS, THE NUMBER OF EMPLOYEES, TURNOVER AND JOB OPPORTUNITIES, NEED FOR AGRICULTURAL COMPETENCIES, BEGINNING AND MAXIMUM SALARIES, AGE FOR JOB ENTRY EDUCATION, AND SO FORTH. THERE WERE 1,879 MAJOR BUSINESSES CONSIDERED TO BE AGRICULTURALLY RELATED, AND 719 OF THESE WERE INTERVIEWED. THE SAMPLE PERCENTAGE VARIED FROM 40 PERCENT TO 66 PERCENT DEPENDING ON THE NUMBER OF BUSINESSES AND THE VARIATION OF THE BUSINESS ACTIVITIES. TWO INTERVIEW FORMS WERE USED. DATA INDICATED THAT--(1) 38 PERCENT OF THE WORKERS IN OFF-FARM AGRICULTURAL BUSINESSES NEEDED AGRICULTURAL COMPETENCIES, (2) THE GREATEST NUMBER OF EMPLOYEES WAS FROM THE SKILLED AND SEMISKILLED LEVELS, (3) THE NUMBER OF AGRICULTURALLY COMPETENT WORKERS WAS EXPECTED TO INCREASE 34 PERCENT BY 1969, (4) THE GREATEST INCREASE IN NUMBER OF EMPLOYEES WAS EXPECTED IN ORNAMENTAL HORTICULTURE, AGRICULTURAL MACHINERY, AND AGRICULTURAL SUPPLIES BUSINESSES, (5) 50 PERCENT OF THE EMPLOYEES NEEDED EDUCATION BEYOND HIGH SCHOOL, (6) THE NEED FOR PROFESSIONAL, COLLEGE-TRAINED PEOPLE WAS ESTIMATED TO BE ABOUT 400 PER YEAR, AND (7) IN 82 PERCENT OF THE CASES, MANAGERS PREFERRED EMPLOYEES WITH A FARM OR RURAL BACKGROUND. (PA)

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Dr. James Plaxico, Agricultural Economics.

Mr. George Abshier, Agricultural Extension Service.

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DIGEST

This report is a summarization of the findings in over 700 personal interviews with owners or managers of several types of businesses serving farmers' needs or processing and distributing farm products. Interviews were made in every county in Oklahoma and in almost every town. Businesses are concentrated in the larger population areas of the state; however, many of the firms were found in the more sparcely populated sections.

The report is divided into five sections. The first deals with the number of businesses in the population and the sample, number of persons employed, and the number needing agricultural competencies. The second section considers the number of agriculturally trained people that will be needed in the five year period, 1964-1969. Section three analyzes the competencies needed by persons in the different occupational titles in the businesses. The fourth section deals with characteristics of workers such as age, education, background, and salary. Section five is a summary of the findings related to professional workers in private, state, and federal agencies.

Generalizations that can be drawn from the findings are:

1. Thirty-eight percent of the workers in off-farm agricultural businesses need agricultural competencies in order to successfully perform their duties in the business.
2. The greatest number of employees is found in the service (skilled and semi-skilled) phase of the businesses.
3. Managers and owners of the off-farm agricultural businesses expect to have a 34 percent increase in the number of agriculturally competent employees by 1969.
4. The greatest increase in number of employees with agricultural training is expected in the Ornamental Horticulture, Agricultural Machinery, and Agricultural Supplies businesses.

5. Competency in human relations and salesmanship are generally needed by all employees, but in varying degrees.

6. Agricultural competencies needed are largely determined by type of business and product handled.

7. Salaries and wages in some service types of employment in off-farm agricultural businesses are relatively low. An effective training program for workers at this level should raise this beginning wage.

8. Approximately fifty percent of the employees in off-farm agricultural businesses need education beyond the high school level while for the other half a high school education is sufficient.

9. The average minimum age for employment in agricultural businesses is 20 years of age. While age requirements for some of the jobs available are below this, consideration should be given to a program of continuing education for many of our students.

10. Managers interviewed indicated that in 82 percent of the cases they would prefer employees with a farm or rural background. The remaining 18 percent had no preference as to background.

11. The annual need for professional college trained agricultural workers in the business and in service agencies interviewed was estimated to be about four hundred per year.

12. Occupational titles needing the greatest number of workers, not including professional workers, in the next five years are:

    Agricultural Machinery Salesman
    Agricultural Machinery Mechanic
    Agricultural Machinery Parts Man
    Agri. Machinery Mechanic's Helper
    Agricultural Supplies Manager
    Agricultural Supplies Salesman
    Agricultural Supplies Mill Worker
    Cotton Ginner
    Greenhouse Grower
    Nursery Landscape Gardner
    Applicator Flagman
    Meat Processing Butcher
    Dairy Processing Processman
    Grain Storage Elevator Supt.

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INTRODUCTION

As farmers in Oklahoma and the nation become more highly trained and more efficient in adapting new technological knowledge to their farming operations, farms increase in size and the number of workers required to produce the nation's food and fiber decreases. A concomitant yet opposite change occurs in those businesses which perform services for farmers or which market, process, and distribute the farmer's product. Farmers are demanding more and more skilled assistance from businesses off the farm in the operation of their highly complex production business. On the other hand, consumers are demanding a product which requires processing and distribution services which must be performed off the farm. Thus we have developing in this country a vast network of enterprises to perform these services for the farmer. The term, "Off-Farm Agricultural Business", has become generally accepted as the designation for these companies. The people employed in these businesses are said to be working in off-farm agricultural occupations.

Many of the workers in these off-farm agricultural businesses need competencies in agriculture. It was a growing awareness of urgent need for more information on requirements of these off-farm agricultural occupations which prompted the State Board for Vocational Education and Oklahoma State University to undertake a study which would identify the employment opportunities and training needs which exist in these particular types of businesses. This two-year study was started in January of 1964 under the direction of Dr. Everett Edington, then of the Agricultural Education Department, Oklahoma State University, and two graduate assistants in the Agricultural Education Department, William Stevenson and Roy Butler.

OBJECTIVES OF THE STUDY

In recognition of the need to change programs of vocational education in agriculture, and in light of the Vocational Education Act of 1963 which calls for the preparation of persons for employment in off-farm agriculture as well as for farming and ranching, state leaders in agricultural education and vocational agriculture gave careful consideration to designing this study. The plans for this study were oriented to achieving the following basic objectives:

1. To identify present and emerging off-farm agricultural occupations, other than farming and ranching, for which vocational technical or higher education should be available.
2. To determine present numbers of employees in these occupations, and to identify those occupational job titles which need agricultural competencies. (The term, agricultural competencies, is defined as knowledges or skills in one or more of the primary areas of plant science, animal science, agricultural business management and marketing, and agricultural mechanization.)
3. To estimate the annual turnover and entry opportunities in these occupations and job titles.
4. To determine competencies needed for entry and advancement in these occupations.
5. To determine other characteristics of these occupations such as beginning and maximum salary, minimum age for job entry, required formal education and experience, labor laws and union restrictions, and licensing and certification requirements.

STATEMENT OF PROCEDURE

The information was secured by personal interview with the owner or manager or other responsible person of the selected businesses. Businesses were selected by random sampling of a list of each type of business. The vocational agriculture teacher in the local community was asked to make the appointments for the interview, and to accompany the interviewer on at least one call if possible.

Information was secured from 719 businesses considered to be agriculturally related in the estimation of the staff of the Agricultural Education Department and the advisory committee. The population included all of the businesses within the selected categories now operating in the state of Oklahoma. The sample percentage varied from 40 percent to 66 percent, depending upon the number of businesses and the variation found in activities performed by the business.

Interview forms were approved by the advisory committee and were tested on a limited number of businesses before the actual interviews started. Form I covered a general review of the business, its functions, years in operation, and relation to agriculture. Employees were divided into the various job titles with the number of full-time and part-time employees needing agricultural competencies in each job title recorded. Form II was used to get information on each job title found in the business. The employer was asked to rate the importance of various competencies needed to enter and advance in the job title. These competencies were divided into agricultural competencies, business and distributive competencies, and trade and industrial competencies.

Data from the study were analyzed in the computer centers of Oklahoma State University and Ohio State University.

BUSINESSES INCLUDED IN THE STUDY

The types of agricultural businesses and industries used in the study were selected because of their agricultural importance to Oklahoma. There are, undoubtedly, other businesses which employ people needing agricultural competencies. The list of businesses interviewed presented in Table I represents only the major agricultural businesses and should not be interpreted as including all the potential employers of agriculturally trained people. Further studies of other types of enterprises would very likely identify other employment opportunities and training needs.

The data from this project were collected from 719 different agricultural businesses in Oklahoma. This represents 38 percent of the total of these types of businesses now in operation in the state. When forestry is not considered, this amounts to 42 percent of the businesses. Only the major forestry businesses were interviewed because it was found that the small individual operations offered very limited employment opportunities for those with agricultural training. Interviews were made in each county of the state to obtain the data.

The size of the sample varied from 40 to 66 percent of the total population depending on the number of businesses in existence and the variety of operations within the various types of businesses. Cooperation and interest on the part of the employers were excellent. Cases in which the interviewer failed to effect successful interviews with the manager or some other responsible person in the business were extremely rare.

In the course of the investigation, it was found that the term, Agricultural Supplies Business, is more appropriate than Feed, Seed, and Fertilizer and that Ornamental Horticulture should be used rather than Greenhouse and Nursery. These more acceptable terms will be used in the body of this report to refer to the businesses mentioned.

TABLE I

TOTAL NUMBER OF SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA, NUMBER INTERVIEWED, AND PERCENT OF TOTAL

Type of Agricultural Business	Total Number in Population	Number in Sample	Percent of Total
Meat Packing & Processing	255	102	40
Dairy Processing	38	21	55
Cotton Gins & Mills	159	74	47
Grain Storage	104	47	45
Agricultural Supplies (Feed, Seed, & Fertilizer)	390	156	40
Ornamental Horticulture (Greenhouse & Nursery)	317	127	40
Applicators	69	31	45
Forestry	192	10	--
Agricultural Machinery	320	128	40
Poultry Processing, Meat, & Eggs	35	23	66
Total	1879	719	38

EMPLOYMENT IN OFF-FARM AGRICULTURAL BUSINESSES

Tables II, III, and IV deal with current employment in off-farm agricultural businesses in Oklahoma. Consideration is also given to the number of employees who need agricultural competencies in order to be successful in their particular job. This was determined by asking the employer to designate those job titles which require agricultural competencies. It will be noted that 38 percent of all of the employees in these types of businesses need these competencies. Those businesses which have the largest percentages of workers possessing agricultural skills and knowledge are Agricultural Machinery, Ornamental Horticulture, and Agricultural Supplies. These businesses are also the ones having the greatest number of employees falling in this category.

Considering these businesses according to their distribution of full-time, part-time, and male and female employees with agricultural competencies (Table III), we find that Ornamental Horticulture hires a considerable number of part-time workers and female workers. Other businesses which use a large proportionate share of part-time workers are the cotton industry and the applicator business. We find a considerable number of part-time and female workers in the agricultural supplies business but their percentage of the total is relatively small.

Table IV looks at the workers needing agricultural competencies by level of employment. The service areas including skilled and semi-skilled workers show the greatest concentration of agriculturally trained people. The levels of Management, Sales, and Supervision indicate the next areas of greatest numbers of agriculturally competent employees. It must be kept in mind that these tables do not include the professional workers in agricultural agencies of the government and state. This information is presented elsewhere in this report.

TABLE II

TOTAL PERSONS EMPLOYED AND NUMBER NEEDING AGRICULTURAL COMPETENCIES IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA

Type of Agricultural Business	Total Number Employed	Number Needing Agricultural Competencies	Percent Needing Agricultural Competencies
Meat Packing & Processing	6,688	1,140	17
Dairy Processing	3,282	447	14
Cotton Gins & Mills	1,674	447	25
Grain Storage	1,528	455	30
Agricultural Supplies	3,712	2,205	59
Ornamental Horticulture	3,285	2,100	64
Applicators	1,098	544	50
Forestry	368	127	35
Agricultural Machinery	2,550	1,962	77
Poultry Processing, Meat, & Eggs	929	72	6
Total	25,114	9,499	38

TABLE III

NUMBER MALE AND FEMALE, FULL-TIME AND PART-TIME WORKERS IN JOBS REQUIRING AGRICULTURAL COMPETENCIES IN OKLAHOMA BY TYPE OF BUSINESS

Type Agricultural Business	Full-Time		Part-Time	
	Male	Female	Male	Female
Meat Packing & Processing	1002	68	60	10
Dairy Processing	445	2		
Cotton Gins & Mills	255	9	177	6
Grain Storage	420	7	28	
Agricultural Supplies	1885	110	200	10
Ornamental Horticulture	1372	130	540	58
Applicators	362	8	156	18
Forestry	113	4	10	
Agricultural Machinery	1782	58	110	12
Poultry Processing, Meat, & Eggs	62	8	2	—
Totals	7698	404	1283	114

TABLE IV

NUMBER WORKERS IN JOBS THAT REQUIRE AGRICULTURAL COMPETENCIES IN OKLAHOMA BY LEVEL OF EMPLOYMENT

Level of Employment	Meat Proc.	Dairy Proc.	Cotton Gins & Mills	Grain Storage	Agri. Supplies	Orn. Hort.	Appli-cators	Fores-try	Agri. Mach.	Poultry Processing, Meat & Eggs	Total
Professional	2	18	0	0	0	27	0	48	0	0	95
Technical	0	21	8	19	87	11	46	58	5	6	261
Managerial	292	76	164	174	623	389	90	6	416	27	2257
Supervisory	82	77	25	125	192	180	46	0	72	6	805
Clerical	9	2	38	18	164	20	22	4	77	3	357
Sales	120	103	20	28	412	133	6	0	182	4	1008
Skilled	519	150	162	89	573	689	179	9	917	26	3313
Semi-Skilled	116	0	30	2	154	651	155	2	293	0	1403
Totals	1140	447	447	455	2205	2100	544	127	1962	72	9499

EMPLOYMENT OPPORTUNITIES

One of the major objectives of this study was to determine the employment opportunities in off-farm agricultural business and industry. Tables V, VI, VII, and VIII give the employers' estimates of their needs of agriculturally competent employees over the five-year period, 1964 to 1969. Employers estimated a 34 percent increase in the number of employees possessing agricultural competencies in that five-year period. All businesses represented expected an increase in the number of these employees. Businesses which anticipate the greatest increase in number of these workers are Ornamental Horticulture, Agricultural Machinery, and Agricultural Supplies. Training programs in Oklahoma should probably concentrate in these areas with some attention given to training for those businesses which show more modest increases.

Table VI considers both increase in employees and estimated replacement needs in the several businesses. Again we find the greatest employment opportunities in the businesses dealing with horticulture, machinery, and supplies. Meat Processing, Dairy Processing, Grain Storage, and Applicators will also be needing agriculturally trained employees in numbers which justify training programs in these areas.

Considering employment opportunites by level of employment (Table VII) we find that the service areas of skilled and semi-skilled offer the greatest potential for agriculturally trained personnel. Managers, supervisors, and salesmen also offer considerable opportunity for placement in these off-farm agricultural businesses. The more detailed Table VIII shows the distribution of additional workers which managers estimated they will need in the various job titles connected with their businesses.

TABLE V

NUMBER OF EMPLOYEES NEEDING AGRICULTURAL COMPETENCIES WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA IN 1964, ESTIMATED NUMBER IN 1969, AND PERCENT INCREASE

Type Agricultural Business	Number Persons Needing Agricultural Competencies		Percent Increase
	1964	1969	
Meat Packing & Processing	1140	1510	32
Dairy Processing	447	629	40
Cotton Gins & Mills	447	498	11
Grain Storage	455	595	31
Agricultural Supplies	2205	2775	26
Ornamental Horticulture	2100	3063	46
Applicators	544	671	23
Forestry	127	143	12
Agricultural Machinery	1962	2780	42
Poultry Processing, Meat, & Eggs	72	104	44
Totals	9,499	12,768	34

TABLE VI

NUMBER OF NEW EMPLOYEES WITH AGRICULTURAL COMPETENCIES NEEDED BY 1969 IN SELECTED AGRICULTURAL BUSINESSES IN OKLAHOMA

Type Agricultural Business	Full-Time					Part-Time				
	Replacements		Additions		Total	Replacements		Additions		Total
	Male	Female	Male	Female		Male	Female	Male	Female	
Meat Packing & Processing	205	15	312	12	544	17	2	13	7	39
Dairy Processing	109		165		274					
Cotton Gins & Mills	43		26		69	54	2	27		83
Grain Storage	94		115		209	19		22		41
Agricultural Supplies	456	9	450	11	926	110		102		212
Ornamental Horticulture	598	6	601	11	1216	493	17	323	12	845
Applicators	165		91		256	99	9	55		163
Forestry	21		16		37	50				50
Agricultural Machinery	349		780	9	1138	30		39		69
Poultry Processing	14	—	25	2	41	2	—	—	—	2
Totals	2054	30	2581	45	4710	874	30	581	19	1504

TABLE VII

NUMBER NEW WORKERS WITH AGRICULTURAL COMPETENCIES NEEDED IN OKLAHOMA BY 1969 BY TYPE OF BUSINESS AND LEVEL OF EMPLOYMENT

Level of Employment	Meat Proc.	Dairy Proc.	Cotton Gins & Mills	Grain Storage	Agri. Supplies	Orn. Hort.	Appli-cators	Fores-try	Agri. Mach.	Poultry Processing, Meat & Eggs	Total
Professional	2	7	0	0	0	10	0	58	0	0	77
Technical	0	5	10	28	74	7	62	6	2	5	199
Managerial	42	39	26	69	156	75	13	2	51	10	483
Supervisory	43	18	8	67	86	287	20	0	22	4	555
Clerical	0	0	10	0	24	2	11	0	19	2	68
Sales	83	55	8	26	283	105	0	0	167	2	729
Skilled	323	150	74	60	421	1333	109	17	630	20	3137
Semi-Skilled	90	0	16	0	94	242	204	4	316	0	966
Totals	583	274	152	250	1138	2061	419	87	1207	43	6214

TABLE VIII-A

NUMBER NEW EMPLOYEES WITH AGRICULTURAL COMPETENCIES NEEDED IN OKLAHOMA BY 1969 IN THE MEAT PROCESSING INDUSTRY BY JOB TITLE

Job Title	Full-Time					Part-Time				
	Replacements		Additions		Total	Replacements		Additions		Total
	Male	Female	Male	Female		Male	Female	Male	Female	
Professional										
Quality Control	2				2					
Managerial										
Manager	10		20		30					
Assistant Manager			2		2					
Plant Manager	8		2		10					
Supervisory										
Production Manager			5		5					
Manuf. Supervisor	10		15		25					
Foreman	8		5		13					
Sales										
Salesman	35		48		83					
Skilled										
Buyer	28		10		38					
Machine Operator			12		12					
Butcher	80	15	130	5	230	2	2	8	2	14
Processman	2		25	2	29					
Semi-Skilled										
Delivery	2		8		10					
Butcher's Helper	20		30	5	55	15		5	5	25

TABLE VIII-B

NUMBER NEW EMPLOYEES WITH AGRICULTURAL COMPETENCIES NEEDED IN OKLAHOMA BY 1969 IN THE DAIRY PROCESSING INDUSTRY BY JOB TITLE

Job Title	Full-Time					Part-Time				
	Replacements		Additions		Total	Replacements		Additions		Total
	Male	Female	Male	Female		Male	Female	Male	Female	
Professional										
Quality Control	2		5		7					
Technical										
Fieldman			5		5					
Managerial										
Manager	15		15		30					
Plant Manager	4		5		9					
Supervisory										
Foreman	5		7		12					
Production Supt.	2		4		6					
Sales										
Sales Supervisor			4		4					
Salesman	15		36		51					
Skilled										
Manuf. Supervisor			9		9					
Foreman			5		5					
Machine Operator	42		7		49					
Processman	24		45		69					
Manuf. Operator			18		18					

TABLE VIII-C

NUMBER NEW EMPLOYEES WITH AGRICULTURAL COMPETENCIES NEEDED IN OKLAHOMA BY 1969 IN COTTON GINS & MILLS BY JOB TITLE

Job Title	Full-Time					Part-Time				
	Replacements		Additions		Total	Replacements		Additions		Total
	Male	Female	Male	Female		Male	Female	Male	Female	
Technical										
Fieldman	2				2	6		2		8
Managerial										
Manager	16		6		22	2				2
Assistant Manager	2				2					
Supervisory										
Foreman			2		2					
Elevator Supt.			2		2					
Plant Manager	4				4					
Clerical										
Bookkeeper	2				2	4	2	2		8
Sales										
Salesman	2		6		8					
Skilled										
Ginner	11		2		13	32		19		51
Pressman			6		6	4				4
Semi-Skilled										
Mill Worker	2		2		4	6		4		10
Deliveryman	2				2					

TABLE VIII-D

NUMBER NEW EMPLOYEES WITH AGRICULTURAL COMPETENCIES NEEDED IN OKLAHOMA BY 1969 IN GRAIN STORAGE BY JOB TITLE

Job Title	Full-Time					Part-Time				
	Replacements		Additions		Total	Replacements		Additions		Total
	Male	Female	Male	Female		Male	Female	Male	Female	
Technical										
Fieldman			4		4	11		11		22
Formulator	2				2					
Managerial										
Manager	18		13		31					
Assistant Manager	9		2		11					
Storage Manager	11		16		27					
Supervisory										
Manuf. Supervisor	11				11					
Sales Supervisor	4		4		8					
Foreman	4		4		8					
Elevator Supt.	16		20		36	4				4
Sales										
Salesman	4		16		20	4		2		6
Skilled										
Mill Worker	4		29		33			9		9
Buyer	4		7		11					
Ginner	7				7					

TABLE VIII-E

NUMBER NEW EMPLOYEES WITH AGRICULTURAL COMPETENCIES NEEDED IN OKLAHOMA BY 1969 IN AGRICULTURAL SUPPLIES BY JOB TITLE

Job Title	Full-Time					Part-Time				
	Replacements		Additions		Total	Replacements		Additions		Total
	Male	Female	Male	Female		Male	Female	Male	Female	
Technical										
Fieldman	7		10		17	15		35		50
Processman	5		2		7					
Managerial										
Manager	65		37		102					
Assistant Manager	15		28		43					
Office Manager	2			2	4					
Plant Manager	2		5		7					
Supervisory										
Warehouse Manager	2				2					
Sales Supervisor	7		15		22					
Foreman	30		25		55					
Elevator Supt.	5		2		7					
Clerical										
Bookkeeper	10	7	5	2	24					
Sales										
Salesman	95	2	162	7	266	10		7		17
Skilled										
Maintenance Foreman	2		7		9					
Mill Worker	175		107		282	80		50		130
Semi-Skilled										
Delivery	22		25		47	5		5		10
Loader	7		15		22			5		5
Machine Operator	5		5		10					

TABLE VIII-F

NUMBER NEW EMPLOYEES WITH AGRICULTURAL COMPETENCIES NEEDED IN OKLAHOMA BY 1969 IN ORNAMENTAL HORTICULTURE BY JOB TITLE

Job Title	Full-Time					Part-Time				
	Replacements		Additions		Total	Replacements		Additions		Total
	Male	Female	Male	Female		Male	Female	Male	Female	
Professional										
Landscape Architect			5		5	5				5
Technical										
Pest Control Supvr.			5		5					
Process Superintendent	2				2					
Managerial										
Manager	27		32		59	2		5	5	12
Assistant Manager		2	2		4					
Supervisory										
Shipping Manager	10		2		12	10		15		25
Plant Manager			2		2					
Farm Supervisor	7		5		12					
Sales Supervisor	2		15	2	19					
Foreman	45		20		65					
Fieldman	50		40		90	25		37		62
Clerical										
Bookkeeper				2	2					
Sales										
Salesman	37		30	2	69	12	12	10	2	36
Skilled										
Head Grower	17				17					
Grower	85		127		212	45		37		82
Grader	7		40		47	175		25		200
Machine Operator	37		12		49					
Transplanter			2		2	25		25		50
Landscape Gardener	190		157		347	172		155		327
Semi-Skilled										
Assistant Grower	82	2	100		184	10		2		12
Asst. Landscape Gardener		2	5	5	12	12	5	12	5	34

TABLE VIII-G

NUMBER NEW EMPLOYEES WITH AGRICULTURAL COMPETENCIES NEEDED IN OKLAHOMA BY 1969 IN THE APPLICATOR BUSINESS BY JOB TITLE

Job Title	Full-Time					Part-Time				
	Replacements		Additions		Total	Replacements		Additions		Total
	Male	Female	Male	Female		Male	Female	Male	Female	
Technical										
Fieldman	13		16		29	24		9		33
Managerial										
Manager	4		9		13					
Supervisory										
Crew Chief	2		16		18			2		2
Clerical										
Office Manager	2		2		4	7				7
Skilled										
Machine Operator	9				9					
Pilot	24		24		48	11		15		26
Chemical Man			2		2	15		9		24
Semi-Skilled										
Flagman	111		22		133	42	9	20		71

TABLE VIII-H

NUMBER NEW EMPLOYEES WITH AGRICULTURAL COMPETENCIES NEEDED IN OKLAHOMA BY 1969 IN FORESTRY BY JOB TITLE

Job Title	Full-Time					Part-Time				
	Replacements		Additions		Total	Replacements		Additions		Total
	Male	Female	Male	Female		Male	Female	Male	Female	
Professional										
Forester	5		3		8	50				50
Technical										
Timber Technician	6				6					
Managerial										
Manager	2				2					
Skilled										
Mechanic	1		1		2					
Carpenter	5		10		15					
Semi-Skilled										
Delivery	2		2		4					

TABLE VIII-I

NUMBER NEW EMPLOYEES WITH AGRICULTURAL COMPETENCIES NEEDED IN OKLAHOMA BY 1969 IN AGRICULTURAL MACHINERY BY JOB TITLE

Job Title	Full-Time					Part-Time				
	Replacements		Additions		Total	Replacements		Additions		Total
	Male	Female	Male	Female		Male	Female	Male	Female	
Technical										
Fieldman			2		2					
Managerial										
Manager	27		20	2	49					
Assistant Manager			2		2					
Supervisory										
Shop Foreman	5		17		22					
Clerical										
Bookkeeper	5		7	7	19					
Sales										
Salesman	25		142		167					
Skilled										
Manuf. Supervisor			2		2					
Mechanic	135		315		450			2		2
Parts Man	35		82		117	5		2		7
Welder	25		27		52					
Semi-Skilled										
Delivery	10		35		45					
Mechanic's Helper	30		82		112			5		5
Set-up Man	52		47		99	25		30		55

TABLE VIII-J

NUMBER NEW EMPLOYEES WITH AGRICULTURAL COMPETENCIES NEEDED IN OKLAHOMA BY 1969 IN POULTRY PROCESSING BY JOB TITLE

Job Title	Full-Time					Part-Time				
	Replacements		Additions		Total	Replacements		Additions		Total
	Male	Female	Male	Female		Male	Female	Male	Female	
Technical										
Fieldman			3		3					
Quality Control	2				2					
Managerial										
Manager	2		4		6					
Production Manager			4		4					
Supervisory										
Shipping Manager	2				2					
Plant Manager			2		2					
Clerical										
Bookkeeper	2				2					
Sales										
Sales Supervisor	2				2					
Skilled										
Warehouse Manager			2		2					
Delivery			4		4					
Grader	4		4	2	10	2				2
Processman			2		2					

COMBINED JOB TITLE LIST - OKLAHOMA

Meat

Managerial	Manager
	Assistant Manager
	Plant Manager
	Sales Manager
Technical	Quality Control Man
Clerical	Bookkeeper
Sales	Salesman
Service	Foreman
	Buyer
	Grader
	Butcher
	Butcher's Helper
	Processor
	Deliveryman

Dairy

Managerial	Manager
	Assistant Manager
	Plant Manager
Technical	Fieldman
	Quality Control Man
Clerical	Bookkeeper
Sales	Sales Supervisor
	Salesman
Service	Foreman
	Production Supt.
	Processman

Cotton Gins

Managerial	Manager
	Assistant Manager
Technical	Fieldman
Clerical	Bookkeeper
Sales	Salesman
Service	Ginner
	Pressman

Grain Storage

Managerial	Manager
	Assistant Manager
	Elevator Supt.
Technical	Fieldman
Clerical	Bookkeeper
Sales	Salesman
Service	Foreman
	Mill Worker

Agricultural Supplies

Managerial	Manager
	Assistant Manager
	Department Manager
	Office Manager
Technical	Fieldman
Clerical	Bookkeeper
Sales	Sales Supervisor
	Salesman
Service	Foreman
	Mill Worker
	Deliveryman

Ornamental Horticulture

Managerial	Manager
	Assistant Manager
	Department Manager
Professional	Landscape Architect
Technical	Pest Control Specialist
Clerical	Bookkeeper
Sales	Sales Supervisor
	Salesman
Service	Production Foreman
	Maintenance Foreman
	Deliveryman
	Head Grower
	Grower
	Assistant Grower
	Landscape Gardener
	Asst. Landscape Gardener

Applicator

Managerial	Manager
	Assistant Manager
	Office Manager
Technical	Fieldman
Clerical	Bookkeeper
Sales	Salesman
Service	Crew Chief
	Pilot
	Flag Man
	Mixer
	Nurse Truck Driver

Forestry

Managerial	Manager
Technical	Timber Technician
Clerical	Bookkeeper
Service	Deliveryman
	Mechanic
	Forester

Agricultural Machinery

Managerial	Manager
	Assistant Manager
	Parts Manager
Clerical	Bookkeeper
Sales	Sales Supervisor
	Salesman
Service	Shop Foreman
	Mechanic
	Parts Man
	Mechanic's Helper
	Set-up & Deliveryman

Poultry

Managerial	Manager
	Production Manager
Technical	Fieldman
	Grader
Clerical	Bookkeeper
Sales	Sales Supervisor

GROUPING OF COMPETENCIES AND JOB TITLES

At the time each employer interviewed furnished the information about numbers of present and future employees in each job title in the business, a checklist of competencies (knowledge, skills, and abilities) was filled out separately for each job title. For each item on the checklist (a total of 63 items), the employer marked the degree of competency required, from none to high, on a three point scale.

A representative profile of the degree of competency needed in each knowledge or job activity was made for each occupation by calculating the mean to the nearest whole number value. A factor analysis program with varimax rotation was used to determine correlations between competencies as well as between job titles. "Factors" which emerge, as illustrated on the following pages, are groupings of competencies or job titles with high "factor loadings".

The groupings of the job titles divided the workers both by type of business and by field of activity. The type of business groups were further divided into one cluster which included sales and management and another which indicated service workers. The mean ratings in Table IX were calculated for each competency group in relation to the job title groups.

In general, it was found that the management category had higher competency requirements than the service group. One significant exception to this rule is in the competency area of agricultural machinery and power where the needs of service workers exceed those of management. In reading down the list of the fields of activity in Table X, it may be seen that the competency ratings drop in most instances.

COMPETENCY FACTOR GROUPS[1]

Employee Traits--Human Relations

Inventory, stock control, warehousing
Worker welfare (insurance, retirement, etc.)
Job opportunities and trends
Job applications, interviews
Buying and merchandising
Receiving, marking, shipping
Internal business organizations
Capital management, financing
Accounting, taxes
Experience in management decisions and problem solving
Employee-supervisor relations
Supervision
Employee relations with fellow employees

Salesmanship

Salesmanship
Customer relations
Public speech
Window and store display
Mathematics
Bookkeeping, business mathematics
Buying and merchandising

Business Management

Legal relations in business management
Government regulations (ICC, FICA, etc.)
Writing
Agricultural policy
Legal requirements of the job
Surveying
Trade relationships, promotion, advertising
Experience in management decisions and problem solving
Time study
Public speech
Accounting, taxes

Agricultural Business Management

Agricultural budgeting, records, and analysis
Farm financing (credit, taxes, etc.)
Accounting, taxes
Bookkeeping, business mathematics
Capital management, financing
Agricultural labor management

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[1] From factor analysis of 60 competencies, 100 job titles, interviews with 700 businesses.

Plant and Soil Science

Physical characteristics of soil
Chemical characteristics of soil
Additional plant production practices
Plant growth, fertilization
Soil conservation
Plant propagation, seed production
Controlling insects, diseases, weeds

Animal Science

Animal growth, feeding
Animal breeding, selection
Animal housing and equipment
Animal health and sanitation
Agricultural marketing practices

Agricultural Machinery and Power

Safety skills
Sheet metal skills
Farm power and machinery
Welding skills
Manuals, technical and service, use of
Engines, repair and maintenance

Building Construction Technology

Carpentry and cabinet working
Plumbing
Blueprint reading
Heating and ventilation
Electricity
Masonry
Drafting and design
Farm buildings and conveniences
Farm construction and maintenance
Sheet metal skills
Rural electrification and processing
Soil structures (ditches, ponds, etc.)
Agricultural labor management
Tool and die making
Trade relationships
Electronics
Industrial chemistry

TABLE IX

AVERAGE COMPETENCY RATING FOR EMPLOYEES IN TWO FIELDS OF ACTIVITY IN FOUR KINDS OF AGRICULTURAL BUSINESSES

Type of Business and Field of Activity	Competency Group (Subject Matter) Average Ratings*							
	Employee Traits, Human Relations	Salesmanship	Business Management	Agricultural Business Management	Plant and Soil Science	Animal Science	Agri. Machinery and Power	Building Construction Technology
Agricultural Supplies:								
Management and Sales	2.0	2.2	1.9	1.9	2.2	2.1	1.3	1.2
Service	1.8	2.1	1.6	1.5	2.0	1.3	1.6	1.2
Agricultural Machinery:								
Management and Sales	2.4	2.5	2.1	1.8	2.1	1.4	1.8	1.4
Service	1.7	1.9	1.6	1.3	1.6	1.4	2.3	1.2
Ornamental Horticulture:								
Management and Sales	2.3	2.2	2.0	1.6	2.9	1.3	1.5	1.2
Service	2.0	2.1	1.8	1.3	2.5	1.1	1.6	1.2
Meat, Dairy, & Poultry Processing:								
Management and Sales	2.0	2.1	2.0	1.7	1.0	2.1	1.3	1.2
Service	1.4	1.5	1.4	1.1	1.0	1.6	1.5	1.1

Competency Rating Scale: High-3, Some-2, None-1

*See pages 26 and 27 for competencies within listed competency groups.

TABLE X

AVERAGE COMPETENCY RATING FOR EMPLOYEES BY FIELD OF ACTIVITY

Competency Group* (Subject Matter)	Field of Activity Average Ratings				
	Manager, Field Man	Assistant Manager	Salesman	Bookkeeper	Service Worker
Employee Traits, Human Relations	2.0	2.4	1.8	1.7	1.4
Salesmanship	2.2	2.2	2.6	2.3	1.7
Business Management	1.9	2.1	2.2	1.9	1.4
Agricultural Business Management	1.7	2.0	1.5	2.1	1.1
Plant and Soil Science	2.1	2.0	1.8	1.8	1.2
Animal Science	2.1	1.3	1.2	1.4	1.5
Agricultural Machinery and Power	1.6	1.6	1.6	1.3	1.4
Building Construction Technology	1.3	1.3	1.1	1.1	1.1

Competency Rating Scale: High-3, Some-2, None-1

*See pages 26 and 27 for competencies within listed competency groups.

CHARACTERISTICS OF EMPLOYEES

This section of the report deals with the employers' evaluation of some of the characteristics which those designing the study thought might be important to those training for occupations in off-farm agricultural businesses. These characteristics include beginning and maximum salary, educational level requirements, minimum and maximum entry ages, and residential background preferences for the various job titles in the different agricultural businesses. The breadth and depth of these interviews gives us a comprehensive view of the characteristics which most employers look for in a prospective employee in the types of businesses interviewed.

Beginning and Maximum Salaries and Wages

The salaries received by workers in off-farm agricultural businesses vary widely within each of the businesses. As a matter of fact, the variation is much wider within the businesses than between businesses as we can see in Tables XI and XII. Generally, professional and managerial fields of activity command the highest beginning salary with technical, supervisory, and sales levels receiving wages in the middle category and skilled, clerical, and semi-skilled workers getting relatively low starting incomes. Maximum salaries show less variation than do beginning salaries. The professional, technical, managerial, and supervisory positions eventually reach higher wage levels than do those in sales and skilled occupations. Average salary level within a particular business is probably a better indication of the job's salary potential than averages between businesses. Wages in semi-skilled jobs, as would be expected, are relatively low and our training programs should be designed to move people rather quickly out of this level of employment. Table XIII gives a more detailed breakdown on the salaries which are being paid in the various job titles in off-farm agricultural businesses.

TABLE XI

AVERAGE BEGINNING MONTHLY SALARY IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY LEVEL OF EMPLOYMENT

Level of Employment	Meat Proc.	Dairy Proc.	Cotton Gins & Mills	Grain Storage	Agri. Supplies	Orn. Hort	Appli-cators	Fores-try	Agri. Mach.	Poultry Processing, Meat & Eggs	Total Avg.
Professional	275	500				430		400			401
Technical		500	450	550	379	351	298	208	350	350	382
Managerial	420	500	446	350	420	388	400	400	436	408	417
Supervisory	383	496	307	364	278	317	410		475	300	370
Clerical	250	250	250	265	250	240	400	224	300	308	274
Sales	400	354	340	320	300	250			400	600	370
Skilled	343	301	257	378	302	262	508	280	320	254	320
Semi-Skilled	285		219	200	273	168	325	200	233		238

TABLE XII

AVERAGE MAXIMUM MONTHLY SALARY IN SELECTED OFF FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY LEVEL OF EMPLOYMENT

Level of Employment	Meat Proc.	Dairy Proc	Cotton Gins & Mills	Grain Storage	Agri. Supplies	Orn. Hort.	Applicators	Forestry	Agri. Mach.	Poultry Processing, Meat & Eggs	Total Avg
Professional	420	600				640		625			571
Technical		600	600	675	475	453	413	265	625	797	545
Managerial	542	665	550	508	537	475	534	425	578	469	528
Supervisory	500	588	365	430	370	409	615		842	610	525
Clerical	370	275	285	315	300	320	500	240	350	375	333
Sales	500	588	438	340	400	350			600	700	490
Skilled	466	359	306	475	409	342	625	360	427	288	406
Semi-Skilled	325		273	240	347	190	400	240	315		291

TABLE XIII-A

MEDIAN AND RANGE OF BEGINNING AND MAXIMUM SALARY IN OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

MEAT PROCESSING

Level of Employment Job Title	Monthly Full-Time			
	Beginning		Maximum	
	Median	Range	Median	Range
Professional				
Quality Control	275	275	420	350-700
Managerial				
Manager	400	192-833	525	300-1000
Assistant Manager	360	200-560	500	200-700
Plant Manager	500	320-600	600	500-600
Supervisory				
Production Manager	300	300	400	400
Manuf. Supervisor	450	450	600	600
Foreman	400	320-500	500	360-800
Clerical				
Office Manager	200	200	400	400
Bookkeeper	300	200-400	340	200-500
Sales				
Salesman	400	125-500	500	200-833
Skilled				
Farm Supervisor	380	260-500	460	320-600
Buyer	417	300-700	600	400-1250
Grader	400	400	600	600
Machine Operator	360	360	540	540
Butcher	300	160-400	340	200-600
Processman	200	184-320	256	200-400
Semi-Skilled				
Delivery	370	240-500	410	280-540
Butcher's Helper	200	160-300	240	200-340

TABLE XIII-B

MEDIAN AND RANGE OF BEGINNING AND MAXIMUM SALARY IN OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

DAIRY PROCESSING

Level of Employment Job Title	Monthly Full Time			
	Beginning		Maximum	
	Median	Range	Median	Range
Professional				
Quality Control	500	400-600	600	500-750
Technical				
Fieldman	500	300-542	600	400-750
Managerial				
Manager	500	280-833	750	320-1666
Assistant Manager	500	500	525	400-650
Plant Manager	500	360-700	720	500-1000
Supervisory				
Foreman	450	320-500	600	440-833
Production Supt.	542	328-600	575	400-750
Clerical				
Bookkeeper	250	250	275	275
Sales				
Sales Supervisor	408	400-667	715	500-1000
Retail Sales	300	160-375	460	260-600
Skilled				
Manuf. Supervisor	256	256	312	312
Machine Operator	400	400	460	460
Processman	325	200-450	400	350-550
Manuf. Operator	224	224	264	264

TABLE XIII-C

MEDIAN AND RANGE OF BEGINNING AND MAXIMUM SALARY IN OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

COTTON GINS

Level of Employment Job Title	Monthly Full-Time			
	Beginning		Maximum	
	Median	Range	Median	Range
Technical				
Fieldman	450	300-500	600	400-833
Managerial				
Manager	400	125-583	500	212-833
Assistant Manager	400	280-500	500	360-833
Supervisory				
Foreman	200	200	217	217
Elevator Supt.	400	400	500	500
Clerical				
Bookkeeper	250	200-340	285	200-400
Sales				
Salesman	300	250-333	400	300-500
Skilled				
Ginner	300	200-417	383	240-600
Pressman	270	200-340	320	240-400
Semi-Skilled				
Mill Worker	200	200	240	240
Delivery Man	136	136	240	240
Maintenance	320	320	340	340

TABLE XIII-D

MEDIAN AND RANGE OF BEGINNING AND MAXIMUM SALARY IN OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

COTTON MILLS

Level of Employment Job Title	Monthly Full-Time Beginning Median	Beginning Range	Maximum Median	Maximum Range
Managerial				
Manager	583	450-600	700	650-800
Assistant Manager	400	400	500	500
Supervisory				
Plant Manager	320	216-425	378	232-525
Sales				
Salesman	380	300-458	475	450-500
Skilled				
Mill Worker	200	200	216	216

TABLE XIII-E

MEDIAN AND RANGE OF BEGINNING AND MAXIMUM SALARY IN OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

GRAIN STORAGE

Level of Employment Job Title	Monthly Full-Time Beginning Median	Beginning Range	Maximum Median	Maximum Range
Technical				
Fieldman	600	600	750	500-1000
Formulator	500	500	600	600
Managerial				
Manager	425	288-833	600	300-1000
Assistant Manager	350	200-550	400	240-600
Storage Manager	275	250-300	525	450-600
Supervisory				
Warehouse Manager	320	320	400	400
Manuf. Supervisor	400	400	500	500
Sales Supervisor	400	400	450	450
Foreman	340	320-450	400	360-500
Elevator Supt.	360	200-500	400	240-850
Clerical				
Office Manager	240	240	280	280
Bookkeeper	290	250-400	350	300-500
Sales				
Salesman	320	216-500	340	240-833
Skilled				
Mill Worker	260	180-375	300	240-525
Mechanic	400	400	450	450
Buyer	450	400-500	750	500-1000
Ginner	400	400	400	400
Semi-Skilled				
Mechanic's Helper	200	200	240	240

TABLE XIII-F

MEDIAN AND RANGE OF BEGINNING AND MAXIMUM SALARY IN OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

AGRICULTURAL SUPPLIES

Level of Employment Job Title	Monthly Full-Time Beginning Median	 Range	 Maximum Median	 Range
Technical				
Fieldman	417	350-500	550	500-750
Processman	340	340	400	400
Managerial				
Manager	350	200-1250	600	240-2500
Assistant Manager	400	200-833	500	232-1000
Office Manager	400	275-642	500	400-750
Shipping Manager	450	450	500	500
Plant Manager	500	380-667	583	440-1000
Supervisory				
Warehouse Manager	300	200-400	320	240-450
Sales Supervisor	240	200-625	320	240-1000
Foreman	270	192-500	390	200-833
Elevator Supt.	300	200-450	450	240-720
Clerical				
Bookkeeper	250	152-500	300	200-600
Sales				
Salesman	300	120-500	400	200-1000
Skilled				
Farm Supervisor	230	200-260	320	300-340
Maintenance Foreman	360	360	400	400
Mill Worker	260	160-367	290	200-450
Buyer	500	500	833	833
Egg Grader	160	160	200	200
Semi-Skilled				
Delivery	240	200-380	350	200-400
Loader	280	200-375	330	240-417
Machine Operator	300	300	360	320-400

TABLE XIII-G

MEDIAN AND RANGE OF BEGINNING AND MAXIMUM SALARY IN OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

ORNAMENTAL HORTICULTURE

Level of Employment Job Title	Monthly Full-Time			
	Beginning		Maximum	
	Median	Range	Median	Range
Professional				
Landscape Architect	430	374-600	640	450-800
Technical				
Pest Control Supvr.	317	317	333	333
Process Superintendent	437	437	625	625
Transplant Supt.	300	300	400	400
Managerial				
Manager	400	120-1000	500	200-2000
Assistant Manager	375	300-500	450	320-1000
Supervisory				
Production Manager	475	250-700	700	400-1000
Shipping Manager	350	200-600	433	433
Plant Manager	275	250-300	345	292-400
Farm Supervisor	350	300-400	375	300-450
Sales Supervisor	300	240-400	400	300-450
Foreman	240	200-360	310	200-800
Fieldman	232	232	300	200-400
Clerical				
Bookkeeper	240	140-400	320	200-500
Sales				
Salesman	250	160-500	350	240-1233
Skilled				
Maintenance Foreman	400	400	475	400-542
Head Grower	320	200-417	435	320-517
Grower	340	160-500	500	200-667
Grader	150	144-160	200	200
Machinery Operator	160	160	200	200
Landscape Gardener	200	160-250	240	200-400
Semi-Skilled				
Assistant Grower	176	100-300	200	160-400
Asst. Landscape Gardener	160	120-200	180	160-300

TABLE XIII-H

MEDIAN AND RANGE OF BEGINNING AND MAXIMUM SALARY IN OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

APPLICATOR BUSINESS

Level of Employment Job Title	Monthly Full-Time			
	Beginning		Maximum	
	Median	Range	Median	Range
Technical				
Fieldman	300	300	400	400
Mixer	296	292-400	425	400-450
Managerial				
Manager	500	250-833	667	400-1250
Assistant Manager	300	300	400	400
Supervisory				
Crew Chief	410	320-500	615	400-833
Clerical				
Office Manager	400	400	500	500
Skilled				
Pilot	615	400-833	800	400-1250
Chemical Man	400	400	450	450
Semi-Skilled				
Flag Man	325	325	400	400

TABLE XIII-I

MEDIAN AND RANGE OF BEGINNING AND MAXIMUM SALARY IN OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

FORESTRY

Level of Employment Job Title	Monthly Full-Time Beginning Median	Monthly Full-Time Beginning Range	Monthly Full-Time Maximum Median	Monthly Full-Time Maximum Range
Professional				
Forester	400	400	625	600-650
Technical				
Timber Technician	208	200-217	265	250-280
Managerial				
Manager	400	250-600	425	333-800
Clerical				
Bookkeeper	224	224	240	240
Skilled				
Mechanic	300	300	360	360
Carpenter	260	240-280	360	320-400
Semi-Skilled				
Delivery	200	200	240	240

TABLE XIII-J

MEDIAN AND RANGE OF BEGINNING AND MAXIMUM SALARY IN OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

AGRICULTURAL MACHINERY

Level of Employment Job Title	Monthly Full-Time			
	Beginning		Maximum	
	Median	Range	Median	Range
Technical				
Fieldman	350	300-400	625	600-650
Managerial				
Manager	408	200-1000	600	300-1250
Assistant Manager	400	200-450	550	340-600
Plant Manager	500	500	583	583
Supervisory				
Sales Supervisor	875	500-1250	1667	1667
Shipping Manager	250	250	333	333
Shop Foreman	300	200-500	525	450-725
Clerical				
Bookkeeper	300	150-400	350	200-500
Sales				
Salesman	400	200-700	600	200-1000
Skilled				
Manuf. Supervisor	500	500	600	600
Mechanic	280	200-500	400	240-700
Parts Man	300	160-500	420	280-600
Welder	200	160-340	288	240-400
Semi-Skilled				
Delivery	240	140-260	287	240-340
Mechanic's Helper	200	140-300	340	180-500
Set-Up Man	240	192-350	300	192-600
Machine Operator	250	250	333	333

TABLE XIII-K

MEDIAN AND RANGE OF BEGINNING AND MAXIMUM SALARY IN OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

POULTRY PROCESSING - EGGS

Level of Employment Job Title	Monthly Full-Time			
	Beginning		Maximum	
	Median	Range	Median	Range
Technical				
Fieldman	300	200-400	440	440
Quality Control	400	400	700	700
Managerial				
Manager	400	240-700	500	300-800
Assistant Manager	375	375	450	450
Production Manager	450	400-500	525	500-550
Supervisory				
Shipping Manager	320	320	700	700
Plant Manager	280	280	520	340-700
Clerical				
Bookkeeper	308	216-400	375	250-500
Sales				
Sales Supervisor	600	600	700	700
Skilled				
Warehouse Manager	400	400	500	500
Delivery	216	216	240	240
Egg Grader	200	200	240	200-240
Processman	200	200	200	200

TABLE XIII-L

MEDIAN AND RANGE OF BEGINNING AND MAXIMUM SALARY IN OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

POULTRY PROCESSING - MEAT

Level of Employment Job Title	Monthly Full-Time			
	Beginning		Maximum	
	Median	Range	Median	Range
Technical				
Fieldman	500	500	1250	1250
Managerial				
Manager	370	340-400	400	350-450
Skilled				
Grader	200	200	260	260

Education Needed in Off-Farm Agricultural Occupations

Information supplied by the 719 employers interviewed as indicated in Table XIV shows that 50 percent of the jobs available in off-farm agricultural businesses may be filled by persons with a high school education. Forty-eight percent of the employees need education above the high school level. It is interesting to note the very low percent of the jobs which require less than a high school education. Those businesses which indicate the greater percentage of workers with beyond high school education are dairy processing, grain storage, and agricultural machinery. Meat processing, cotton processing, and agricultural supplies were business which required relatively lower percentage of employees with training above the high school level. Post high school technical training is indicated for surprisingly few of the employees. However, when we consider that this type of employee simply has not been available, we can understand why more employers do not require training at this level. Table XV gives a more detailed report of the educational requirements of the job titles in off-farm agricultural business. As would be expected, the amount of education necessary to be employed decreases as we go down the table by levels of employment.

We know that we will, for the immediate future, be faced with the prospect of large numbers of high school graduates who will be seeking employment without further training. This challenges those giving training and education at the high school level to strive to assure preparation which will meet job entry requirements.

TABLE XIV

EDUCATION NEEDED IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY LEVEL OF EMPLOYMENT

Level of Employment	Less Than High School Percent	High School Percent	Post High School Technical Percent	Some College Percent	College Degree Percent	Total Number Interviews
Professional			7	13	80	15
Technical		18	18	34	30	55
Managerial		32	11	32	25	735
Supervisory		63	20	10	7	164
Clerical		70	12	16	2	115
Sales	2	51	6	35	6	178
Skilled	4	64	22	7	3	516
Semi-Skilled	14	78	6	2		162
Percent of Total	2	50	14	21	13	1940

TABLE XV-A

EDUCATION NEEDED IN MEAT PROCESSING INDUSTRY IN OKLAHOMA BY JOB TITLE

Level of Employment Job Title	Less Than High School Percent	High School Percent	Post High School Technical Percent	Some College Percent	College Degree Percent	Total Number Interviews
Professional						
Quality Control					100	1
Managerial						
Manager		45	9	30	16	74
Assistant Manager		100				4
Plant Manager		50	17	17	16	6
Supervisory						
Production Manager		100				1
Manuf. Supervisor				100		1
Foreman		72		14	14	7
Clerical						
Office Manager			100			1
Bookkeeper		100				3
Sales						
Salesman		50		50		18
Skilled						
Farm Supervisor		100				2
Buyer		39		44	17	23
Grader				100		1
Machine Operator		100				1
Butcher	12	83	5			41
Processman	11	89				9
Semi-Skilled						
Delivery		100				3
Butcher's Helper	33	67				24

TABLE XV-B

EDUCATION NEEDED IN THE DAIRY PROCESSING INDUSTRY IN OKLAHOMA BY JOB TITLE

Level of Employment Job Title	Less Than High School Percent	High School Percent	Post High School Technical Percent	Some College Percent	College Degree Percent	Total Number Interviews
Professional						
Quality Control				14	86	7
Technical						
Fieldman				14	86	7
Managerial						
Manager			9	46	45	11
Assistant Manager					100	1
Plant Manager		7	8	8	77	13
Supervisory						
Foreman		17	17	33	33	6
Production Supt.					100	3
Clerical						
Bookkeeper		100				1
Sales						
Sales Supervisor				75	25	4
Retail Sales		80	20			5
Skilled						
Manuf. Supervisor		100				1
Machine Operator		100				4
Processman		75		25		4
Manufacture Operator		100				1

TABLE XV-C

EDUCATION NEEDED IN COTTON GINS IN OKLAHOMA BY JOB TITLE

Level of Employment Job Title	Less Than High School Percent	High School Percent	Post High School Technical Percent	Some College Percent	College Degree Percent	Total Number Interviews
Technical						
Fieldman			40	40	20	5
Managerial						
Manager		56	10	27	7	59
Assistant Manager		40	20	20	20	5
Supervisory						
Foreman		100				2
Elevator Superintendent		100				1
Clerical						
Bookkeeper		63	12	25		16
Sales						
Salesman		67	33			3
Skilled						
Ginner	5	82	10	3		38
Pressman	12	88				8
Semi-Skilled						
Mill Worker		100				2
Delivery Man		100				1
Maintenance		100				1

TABLE XV-D

EDUCATION NEEDED IN COTTON MILLS IN OKLAHOMA BY JOB TITLE

Level of Employment Job Title	Less Than High School Percent	High School Percent	Post High School Technical Percent	Some College Percent	College Degree Percent	Total Number Interviews
Managerial						
Manager			34	33	33	3
Assistant Manager			100			1
Supervisory						
Plant Manager		100				2
Sales						
Salesman				100		2
Skilled						
Mill Worker		100				1

2.

TABLE XV-E

EDUCATION NEEDED IN GRAIN STORAGE IN OKLAHOMA BY JOB TITLE

Level of Employment Job Title	Less Than High School Percent	High School Percent	Post High School Technical Percent	Some College Percent	College Degree Percent	Total Number Interviews
Technical						
Fieldman		34		33	33	3
Formulator					100	1
Managerial						
Manager		17	14	43	26	35
Assistant Manager		56	11	33		9
Storage Manager		50		50		2
Supervisory						
Warehouse Manager				100		1
Production Supervisor				100		1
Sales Supervisor		100				1
Foreman		67		33		3
Elevator Supt.		64	22	14		14
Clerical						
Office Manager				100		1
Bookkeeper		71		29		7
Sales						
Salesman		29	14	57		7
Skilled						
Mill Worker	10	70			20	10
Mechanic			100			1
Buyer				50	50	2
Ginner		100				1
Semi-Skilled						
Mechanic's Helper		100				1

TABLE XV-F

EDUCATION NEEDED IN AGRICULTURAL SUPPLIES IN OKLAHOMA BY JOB TITLE

Level of Employment Job Title	Less Than High School Percent	High School Percent	Post High School Technical Percent	Some College Percent	College Degree Percent	Total Number Interviews
Technical						
Fieldman		17	8	42	33	12
Managerial						
Manager		35	5	42	18	158
Assistant Manager		41	3	31	25	32
Office Manager		13	12	25	50	8
Shipping Manager			100			1
Plant Manager		43	29		28	7
Supervisory						
Warehouse Manager		100				3
Sales Supervisor		78	11		11	9
Foreman		72	14	11	3	35
Elevator Supt.		86	7	7		15
Clerical						
Bookkeeper		67	17	12	4	51
Sales						
Salesman		65	4	28	3	71
Skilled						
Farm Supervisor		100				3
Maintenance Foreman			100			2
Mill Worker	8	90	2			61
Mechanic		50	50			2
Buyer					100	1
Egg Grader		100				1
Semi-Skilled						
Delivery	14	81		5		21
Loader		88	12			8
Machine Operator		100				2

TABLE XV-G

EDUCATION NEEDED IN ORNAMENTAL HORTICULTURE IN OKLAHOMA BY JOB TITLE

Level of Employment Job Title	Less Than High School Percent	High School Percent	Post High School Technical Percent	Some College Percent	College Degree Percent	Total Number Interviews
Professional						
Landscape Architect			25	25	50	4
Technical						
Pest Control Supvr.		50		50		2
Process Superintendent				100		1
Transplant Supt.		17	33	33	17	6
Managerial						
Manager		26	13	25	36	112
Assistant Manager		38	12	38	12	8
Supervisory						
Production Manager		50			50	2
Shipping Manager		100				1
Plant Manager		100				2
Farm Supervisor		100				3
Sales Supervisor		50	50			4
Foreman		75	17	8		12
Fieldman		67	33			3
Clerical						
Bookkeeper		100				4
Sales						
Salesman	11	67		17	5	18
Skilled						
Maintenance Foreman		67	33			3
Head Grower		66	17	17		6
Grower		48	16	26	10	50
Grader		100				2
Machinery Operator		50	50			2
Transplanter		50		50		2
Landscape Gardener	28	67		5		21
Semi-Skilled						
Assistant Grower	13	70	4	13		23
Asst. Landscape Gardener		63	37			8

TABLE XV-H

EDUCATION NEEDED IN THE APPLICATOR BUSINESS IN OKLAHOMA BY JOB TITLE

Level of Employment Job Title	Less Than High School Percent	High School Percent	Post High School Technical Percent	Some College Percent	College Degree Percent	Total Number Interviews
Technical						
Fieldman		12	12	76		8
Mixer			100			2
Managerial						
Manager		18	11	32	39	28
Assistant Manager		100				1
Supervisory						
Crew Chief		100				5
Clerical						
Office Manager		67		33		3
Sales						
Salesman		100				1
Skilled						
Machine Operator		100				1
Pilot		42	42	16		12
Chemical Man	20	80				5
Semi-Skilled						
Flag Man	29	71				7

TABLE XV-I

EDUCATION NEEDED IN FORESTRY IN OKLAHOMA BY JOB TITLE

Level of Employment Job Title	Less Than High School Percent	High School Percent	Post High School Technical Percent	Some College Percent	College Degree Percent	Total Number Interviews
Professional						
Forester					100	3
Technical						
Timber Technician		100				2
Managerial						
Manager		40		20	40	5
Clerical						
Bookkeeper		100				1
Skilled						
Mechanic			100			1
Carpenter		50	50			2
Semi-Skilled						
Delivery		100				1

TABLE XV-J

EDUCATION NEEDED IN AGRICULTURAL MACHINERY IN OKLAHOMA BY JOB TITLE

Level of Employment Job Title	Less Than High School Percent	High School Percent	Post High School Technical Percent	Some College Percent	College Degree Percent	Total Number Interviews
Technical						
Fieldman		50	50			2
Managerial						
Manager		21	16	38	25	127
Assistant Manager		29	43	28		7
Plant Manager					100	1
Supervisory						
Sales Supervisor			50		50	2
Shipping Manager		100				1
Shop Foreman		24	71	5		21
Clerical						
Bookkeeper		80	8	12		25
Sales						
Salesman		30	10	47	13	47
Skilled						
Production Supervisor		100				1
Mechanic		42	57	1		97
Parts Man		59	40	1		77
Welder		67	33			3
Semi-Skilled						
Delivery		86	14			7
Mechanic's Helper	7	87	6			15
Set-up Man	14	78	8			37
Machine Operator		100				1

TABLE XV K

EDUCATION NEEDED IN THE POULTRY PROCESSING INDUSTRY IN OKLAHOMA BY JOB TITLE

Level of Employment Job Title	Less Than High School Percent	High School Percent	Post High School Technical Percent	Some College Percent	College Degree Percent	Total Number Interviews
Technical						
Fieldman		34	33		33	3
Quality Control					100	1
Managerial						
Manager		38	8	23	31	13
Assistant Manager			100			1
Production Manager			50	50		2
Plant Manager					100	1
Supervisory						
Shipping Manager				100		1
Plant Manager			50		50	2
Clerical						
Bookkeeper		50		50		2
Sales						
Sales Supervisor		50			50	2
Skilled						
Warehouse Manager		100				1
Delivery		100				1
Grader		100				7
Processman		100				4

Minimum Age to Enter Off-Farm Agricultural Occupations

Another worker characteristic closely tied to educational requirements is age of employability. Table XVI shows the average minimum age at which employers indicated they would be willing to hire employees.

As would be expected, Table XVI shows that entry age advances as the training and responsibility associated with the job increase. Entry into the service (skilled and semi-skilled), clerical, sales, and technical positions ranges from 20 to 23 years of age. Positions at the managerial and supervisory level may be entered at the average age of 26, while the minimum age for professional people is 31. Considering these averages, there appears to be a two-year gap between the lowest minimum entry age of 20 and the normal age of high school graduation. There are, however, certain job titles for which the minimum age limit is less than the average (Table XVII). Many employers have indicated that age is only an indication of more important characteristics which they desire in employees and that if these attributes can be found in younger people, age is not a factor in selection. Mental and emotional stability, willingness to accept responsibility, ability to work hard, and honesty and accuracy are more important than chronological age to many of those doing the hiring in off-farm agricultural businesses.

If teachers of vocational agriculture and others cooperating in the training of employees in off-farm agriculture can develop these worker characteristics so important to the employer, this gap between age of high school graduation and minimum age for employment may be narrowed. Education beyond the high school level should, of course, be the aim of those who can benefit from it and for whom it is possible.

TABLE XVI

AVERAGE MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY LEVEL OF EMPLOYMENT

Level of Employment	Average Minimum Age
Professional	31
Technical	22
Managerial	26
Supervisory	26
Clerical	22
Sales	22
Skilled	23
Semi-Skilled	20

TABLE XVII-A

MEDIAN AND RANGE OF MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

MEAT PROCESSING

Level of Employment Job Title	Minimum Age to Enter Median	 Range
Professional		
Quality Control	25	25
Managerial		
Manager	27	18-35
Assistant Manager	22	20-35
Plant Manager	32.5	30-35
Supervisory		
Production Manager	25	25
Manuf. Supervisor	24	24
Foreman	30	25-35
Clerical		
Office Manager	25	25
Bookkeeper	20	18-30
Sales		
Salesman	21	18-27
Skilled		
Farm Supervisor	21.5	18-25
Foreman	30	30
Buyer	25	18-35
Grader	22	22
Machine Operator	18	18
Butcher	20	16-30
Processman	22	20-30
Semi-Skilled		
Delivery	22	18-30
Butcher's Helper	20	16-30

TABLE XVII-B

MEDIAN AND RANGE OF MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

DAIRY PROCESSING

Level of Employment Job Title	Minimum Age to Enter Median	 Range
Professional		
Quality Control	30	30
Technical		
Fieldman	22	21-26
Managerial		
Manager	30	22-35
Assistant Manager	25	22-30
Plant Manager	23	21-30
Supervisory		
Foreman	25	25-30
Production Superintendent	30	25-30
Clerical		
Bookkeeper	20	20
Sales		
Sales Supervisor	28	25-30
Retail Sales	23	18-25
Skilled		
Manuf. Supervisor	18	18
Foreman	25	21-30
Machine Operator	21	21
Processman	21	18-25
Manuf. Operator	18	18

TABLE XVII-C

MEDIAN AND RANGE OF MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

COTTON GINS

Level of Employment Job Title	Minimum Age to Enter	
	Median	Range
Technical		
Fieldman	27.5	22-30
Managerial		
Manager	26	19-35
Assistant Manager	25	21-35
Supervisory		
Foreman	25	25
Elevator Superintendent	24	24
Clerical		
Bookkeeper	20	18-25
Sales		
Salesman	21	20-24
Skilled		
Ginner	25	18-40
Pressman	26	18-30
Semi-Skilled		
Mill Worker	21	18-25
Delivery Man	20	20
Maintenance	20	20

TABLE XVII-D

MEDIAN AND RANGE OF MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

COTTON MILLS

Level of Employment	Minimum Age to Enter	
Job Title	Median	Range
Managerial		
Manager	30	23-30
Assistant Manager	22	22
Supervisory		
Plant Manager	24	20-28
Sales		
Salesman	20	18-22
Skilled		
Mill Worker	30	30

TABLE XVII-E

MEDIAN AND RANGE OF MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

GRAIN STORAGE

Level of Employment Job Title	Minimum Age to Enter	
	Median	Range
Technical		
Fieldman	24	24
Mixer	21	21
Managerial		
Manager	25	20-35
Assistant Manager	23.5	20-30
Storage Manager	25	22-30
Supervisory		
Warehouse Manager	30	30
Manuf. Supervisor	26	26
Sales Supervisor	30	30
Foreman	27	24-30
Elevator Superintendent	25	20-30
Clerical		
Office Manager	27	27
Bookkeeper	25	20-30
Sales		
Salesman	22	20-26
Skilled		
Mill Worker	22	17-24
Mechanic	24	24
Buyer	25	24-26
Ginner	30	30
Semi-Skilled		
Mechanic's Helper	25	25

TABLE XVII-F

MEDIAN AND RANGE OF MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

AGRICULTURAL SUPPLIES

Level of Employment Job Title	Minimum Age to Enter Median	 Range
Technical		
Fieldman	22	19-30
Processman	20	20
Managerial		
Manager	25	18-35
Assistant Manager	22	20-35
Office Manager	25	22-30
Shipping Manager	30	30
Plant Manager	32.5	30-35
Supervisory		
Warehouse Manager	25	25
Sales Supervisor	27.5	25-30
Foreman	25	20-35
Elevator Superintendent	25	18-30
Clerical		
Bookkeeper	21	16-30
Sales		
Salesman	22	16-40
Skilled		
Farm Supervisor	23	21-25
Maintenance Foreman	30	30
Mill Worker	18	16-30
Mechanic	21	20-22
Buyer	30	30
Egg Grader	20	20
Semi-Skilled		
Delivery	20	18-30
Loader	19	18-25
Machine Operator	25	21-30

TABLE XVII-G

MEDIAN AND RANGE OF MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

ORNAMENTAL HORTICULTURE

Level of Employment Job Title	Minimum Age to Enter	
	Median	Range
Professional		
Landscape Architect	22	21-30
Technical		
Pest Control Supervisor	22	22
Process Superintendent	22	22
Transplant Superintendent	24	24
Managerial		
Manager	25	20-40
Assistant Manager	22	18-25
Supervisory		
Production Manager	26	26
Shipping Manager	21.5	18-25
Plant Manager	22.5	21-24
Farm Supervisor	27.5	25-30
Sales Supervisor	24	18-26
Foreman	22.5	20-26
Fieldman	20	20
Clerical		
Bookkeeper	20	18-22
Sales		
Salesman	21	18-30
Skilled		
Maintenance Foreman	24	18-25
Head Grower	26	18-30
Grower	23	16-45
Grader	18	18
Machinery Operator	22	22
Transplanter	20	20
Landscape Gardener	17	16-20
Semi-Skilled		
Assistant Grower	20	18-24
Assistant Landscape Gardener	18.5	17-21

TABLE XVII-H

MEDIAN AND RANGE OF MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

APPLICATOR BUSINESS

Level of Employment Job Title	Minimum Age to Enter Median	 Range
Technical		
Fieldman	19	18-21
Formulator	20	18-24
Managerial		
Manager	25	20-35
Assistant Manager	22	22
Supervisory		
Crew Chief	24	21-30
Clerical		
Office Manager	21	20-22
Sales		
Salesman	21	21
Skilled		
Machine Operator	18	18
Pilot	23	20-30
Chemical Man	21.5	18-24
Semi-Skilled		
Flag Man	17	16-18

TABLE XVII-I

MEDIAN AND RANGE OF MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

FORESTRY

Level of Employment Job Title	Minimum Age to Enter Median	 Range
Professional		
Forester	25	25-30
Technical		
Timber Technician	22.5	21-24
Managerial		
Manager	30	25-40
Clerical		
Bookkeeper	21	21
Skilled		
Mechanic	30	30
Carpenter	24	24
Semi-Skilled		
Delivery	20	20

TABLE XVII-J

MEDIAN AND RANGE OF MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

AGRICULTURAL MACHINERY

Level of Employment Job Title	Minimum Age to Enter Median	 Range
Technical		
Fieldman	23	21-25
Managerial		
Manager	28	20-35
Assistant Manager	25	21-35
Plant Manager	30	30
Supervisory		
Sales Supervisor	35	35
Shipping Manager	30	30
Shop Foreman	28	20-35
Clerical		
Bookkeeper	21	18-26
Sales		
Salesman	25	18-32
Skilled		
Manuf. Supervisor	20	20
Mechanic	21	16-30
Parts Man	20	18-30
Welder	18	18
Semi-Skilled		
Delivery	19	18-20
Mechanic's Helper	18	18-25
Set-Up Man	18	16-30
Machine Operator	18	18

TABLE XVII-K

MEDIAN AND RANGE OF MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

POULTRY PROCESSING - EGGS

Level of Employment Job Title	Minimum Age to Enter Median	 Range
Technical		
Fieldman	26.5	25-28
Quality Control	21	21
Managerial		
Manager	25	18-30
Assistant Manager	21	21
Production Manager	25.5	25-26
Supervisory		
Shipping Manager	25	25
Plant Manager	30	30
Clerical		
Bookkeeper	26	26
Sales		
Sales Supervisor	23	20-26
Skilled		
Warehouse Manager	21	21
Delivery	24	24
Egg Grader	20	20
Processman	20	20

TABLE XVII-L

MEDIAN AND RANGE OF MINIMUM AGE TO ENTER EMPLOYMENT IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

POULTRY PROCESSING - MEAT

Level of Employment Job Title	Minimum Age to Enter Median	 Range
Technical		
Fieldman	25	25
Managerial		
Manager	30	30
Plant Manager	30	30
Skilled		
Grader	20	20

Residential Background Preferred for Persons Working in Off-Farm Agriculture

Farm experience is considered to be an important asset and a definite advantage to beginning workers seeking employment in most jobs in off-farm agricultural businesses. As shown in Table XVIII, employers prefer a farm background in 78 percent of the positions considered. Four percent specified a rural, non-farm background, while 18 percent had no preference. An urban background was not preferred by any of the managers interviewed. Businesses which show the greatest percent of employees in which a farm background was desirable were grain storage, cotton, agricultural machinery, applicators, and agricultural supplies--those businesses dealing directly with farmers in sales or service.

Several reasons were given by employers for their preference for young men with a farm background. The farm youth has a store of knowledge which saves valuable training time. In the opinion of the interviewees, the farm youth is more able and willing to work hard. Through experience, business managers have learned that rural youth are punctual, have orderly work habits, and accept responsibility. Young men with a farm background know how to talk the farmer's language. They respect farmers and are sympathetic to farm problems. For these reasons the owners and managers of businesses which deal with farmers and farm products are looking for men with a farm background. Table XIX shows the residential background preference indicated by the managers in the individual job titles in the businesses studied.

TABLE XVIII

RESIDENTIAL BACKGROUND PREFERRED FOR PERSONS WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA

Type of Business	Farm Percent	Rural Non-Farm Percent	No Preference Percent
Meat Processing	68	2	30
Dairy Processing	64	3	33
Cotton Processing	87	7	6
Grain Storage	92	3	5
Agricultural Supplies	82	7	11
Ornamental Horticulture	60	3	37
Applicators	84	0	16
Forestry	80	0	20
Agricultural Machinery	85	3	12
Poultry Processing	63	12	25
Average Percent	78	4	18

TABLE XIX-A

RESIDENTIAL BACKGROUND PREFERRED FOR PERSONS WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

MEAT PROCESSING

Level of Employment Job Title	Farm Percent	Rural Non-Farm Percent	No Preference Percent	Number Interviews
Professional				
Quality Control			100	2
Managerial				
Manager	61	1	38	74
Assistant Manager	25		75	4
Plant Manager	67		33	6
Supervisory				
Production Manager	100			1
Manuf. Supervisor	100			1
Foreman	72	14	14	7
Clerical				
Office Manager	100			1
Bookkeeper	33		67	3
Sales				
Salesman	67	5	28	18
Skilled				
Farm Supervisor	50		50	2
Buyer	87		13	23
Grader	100			1
Machine Operator	100			1
Butcher	71	2	27	41
Processman	56		44	9
Semi-Skilled				
Delivery	67		33	3
Butcher's Helper	58	4	38	24

TABLE XIX-B

RESIDENTIAL BACKGROUND PREFERRED FOR PERSONS WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

DAIRY PROCESSING

Level of Employment Job Title	Farm Percent	Rural Non-Farm Percent	No Preference Percent	Number Interviews
Professional				
Quality Control	71		29	7
Technical				
Fieldman	86		14	7
Managerial				
Manager	50	8	42	12
Assistant Manager	50		50	2
Plant Manager	46	8	46	13
Supervisory				
Foreman	83		17	6
Production Supt.	80		20	5
Clerical				
Bookkeeper	100			1
Sales				
Sales Supervisor	25		75	4
Retail Sales	40		60	5
Skilled				
Manuf. Superintendent	100			1
Foreman	83		17	6
Machine Operator	100			4
Processman	75		25	4
Manuf. Operator	100			1

TABLE XIX-C

RESIDENTIAL BACKGROUND PREFERRED FOR PERSONS WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

COTTON GINS

Level of Employment Job Title	Farm Percent	Rural Non-Farm Percent	No Preference Percent	Number Interviews
Technical				
Fieldman	100			5
Managerial				
Manager	90	5	5	59
Assistant Manager	60		40	5
Supervisory				
Foreman	100			1
Elevator Supt.	100			1
Clerical				
Bookkeeper	75	6	19	16
Sales				
Salesman	67	33		3
Skilled				
Ginner	89	3	8	38
Pressman	100			8
Semi-Skilled				
Mill Worker	100			2
Deliveryman	100			1
Maintenance	100			1

TABLE XIX-D

RESIDENTIAL BACKGROUND PREFERRED FOR PERSONS WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

COTTON MILLS

Level of Employment Job Title	Farm Percent	Rural Non-Farm Percent	No Preference Percent	Number Interviews
Managerial				
Manager	67	33		3
Assistant Manager		100		1
Supervisory				
Plant Manager		100		2
Sales				
Salesman	100			2
Skilled				
Mill Worker		100		1

TABLE XIX-E

RESIDENTIAL BACKGROUND PREFERRED FOR PERSONS WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

GRAIN STORAGE

Level of Employment Job Title	Farm Percent	Rural Non-Farm Percent	No Preference Percent	Number Interviews
Technical				
Fieldman	100			3
Mixer	100			2
Managerial				
Manager.	86	8	6	35
Assistant Manager	78	11	11	9
Storage Manager	100			2
Supervisory				
Warehouse Manager	100			1
Manuf. Supervisor	100			3
Sales Supervisor	100			1
Foreman	100			32
Elevator Supt.	79		21	14
Clerical				
Office Manager	100			1
Bookkeeper	72	14	14	7
Sales				
Salesman	100			7
Skilled				
Mill Worker	100			10
Mechanic	100			1
Buyer	50		50	2
Ginner	100			1
Semi-Skilled				
Mechanic's Helper	100			1

TABLE XIX-F

RESIDENTIAL BACKGROUND PREFERRED FOR PERSONS WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

AGRICULTURAL SUPPLIES

Level of Employment Job Title	Farm Percent	Rural Non-Farm Percent	No Preference Percent	Number Interviews
Technical				
Fieldman	100			12
Managerial				
Manager	86	6	8	158
Assistant Manager	81	6	13	32
Office Manager	75	25		8
Shipping Manager	100			1
Plant Manager	57	14	29	7
Supervisory				
Warehouse Manager	67		33	3
Sales Supervisor	67	22	11	9
Foreman	77	14	9	35
Elevator Supt.	87	7	6	15
Clerical				
Bookkeeper	73	4	23	51
Sales				
Salesman	85	7	8	71
Skilled				
Farm Supervisor	100			3
Maintenance Foreman	100			1
Mill Worker	89	6	5	61
Mechanic	100			2
Buyer			100	1
Egg Grader	100			1
Semi-Skilled				
Delivery	76		24	21
Loader	75		25	8
Machine Operator	100			2

TABLE XIX-G

RESIDENTIAL BACKGROUND PREFERRED FOR PERSONS WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

ORNAMENTAL HORTICULTURE

Level of Employment Job Title	Farm Percent	Rural Non-Farm Percent	No Preference Percent	Number Interviews
Professional				
Landscape Architect	50		50	6
Technical				
Pest Control Supervisor	100			2
Process Superintendent			100	1
Transplant Supt.	100			1
Managerial				
Manager	51	6	43	112
Assistant Manager	38		62	8
Supervisory				
Production Manager	100			2
Shipping Manager	71		29	7
Plant Manager	100			2
Farm Supervisor	100			3
Sales Supervisor	100			4
Foreman	75		25	12
Fieldman	100			3
Clerical				
Bookkeeper	50		50	4
Sales				
Salesman	67		33	18
Skilled				
Maintenance Foreman	50		50	4
Head Grower	50		50	6
Grower	72	4	24	50
Grader	100			2
Machinery Operator	100			1
Transplanter	100			2
Landscape Gardener	71		29	21
Semi-Skilled				
Assistant Grower	65		35	23
Asst. Landscape Gardener			100	15

TABLE XIX-H

RESIDENTIAL BACKGROUND PREFERRED FOR PERSONS WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

APPLICATOR BUSINESS

Level of Employment Job Title	Farm Percent	Rural Non-Farm Percent	No Preference Percent	Number Interviews
Technical				
Fieldman	75		25	8
Managerial				
Manager	82		18	28
Assistant Manager	100			1
Supervisory				
Crew Chief	100			5
Clerical				
Office Manager	100			4
Sales				
Salesman	100			1
Skilled				
Machine Operator	100			3
Pilot	75		25	12
Chemical Man	80		20	5
Semi-Skilled				
Flag Man	86		14	7

TABLE XIX T

RESIDENTIAL BACKGROUND PREFERRED FOR PERSONS WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

FORESTRY

Level of Employment Job Title	Farm Percent	Rural Non-Farm Percent	No Preference Percent	Number Interviews
Professional				
Forester	67		33	3
Technical				
Timber Technician	100			2
Managerial				
Manager	80		20	5
Clerical				
Bookkeeper			100	1
Skilled				
Mechanic	100			1
Carpenter	100			2
Semi-Skilled				
Delivery	100			1

TABLE XIX-J

RESIDENTIAL BACKGROUND PREFERRED FOR PERSONS WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

AGRICULTURAL MACHINERY

Level of Employment Job Title	Farm Percent	Rural Non-Farm Percent	No Preference Percent	Number Interviews
Technical				
Fieldman	50	50		2
Managerial				
Manager	87	2	11	127
Assistant Manager	86		14	7
Plant Manager	100			1
Supervisory				
Sales Supervisor	100			2
Shipping Manager	100			1
Shop Foreman	86		14	21
Clerical				
Bookkeeper	64	12	24	25
Sales				
Salesman	89	7	4	47
Skilled				
Manuf. Superintendent	100			1
Mechanic	77	2	21	97
Parts Man	90	2	8	77
Welder	100			3
Semi-Skilled				
Delivery	86	14		7
Mechanic's Helper	93		7	15
Set-Up Man	95		5	37
Machine Operator	100			5

TABLE XIX-K

RESIDENTIAL BACKGROUND PREFERRED FOR PERSONS WORKING IN SELECTED OFF-FARM AGRICULTURAL BUSINESSES IN OKLAHOMA BY JOB TITLE

POULTRY PROCESSING - EGGS

Level of Employment Job Title	Farm Percent	Rural Non-Farm Percent	No Preference Percent	Number Interviews
Technical				
Fieldman	100			2
Quality Control			100	1
Managerial				
Manager	82	9	9	11
Assistant Manager	100			1
Production Manager	50		50	2
Supervisory				
Shipping Manager	100			1
Plant Manager	50		50	2
Clerical				
Bookkeeper		50	50	2
Sales				
Sales Supervisor	50		50	2
Skilled				
Warehouse Manager			100	1
Delivery	100			1
Egg Grader	67	33		6
Processman	34	33	33	3
POULTRY PROCESSING - MEAT				
Technical				
Fieldman			100	1
Managerial				
Manager	100			2
Plant Manager			100	1
Skilled				
Grader	100			1

PROFESSIONAL AGRICULTURAL EMPLOYEES IN PUBLIC AND PRIVATE SERVICE AGENCIES

An attempt was made in this study to obtain information concerning professional agricultural workers in private and public organizations serving agriculture. Information obtained from interviews with the state head or some other responsible representative of the following agencies is contained in this part of the report:

- Federal Land Bank
- Veterinarians
- State Land Commission
- State Board of Health
- Murray State College
- Noble Foundation
- State Board of Agriculture
- OSU College of Agriculture
- OSU Experiment Station
- Agriculture Extension Service
- State Soil Conservation Service
- Farmers Home Administration--State
- Vocational Agriculture
- Federal Crop Insurance
- Agriculture Stabilization and Conservation

Number of Persons Employed and Anticipated Needs

There are 1,943 full-time and 73 part-time professional agriculture employees in the above mentioned services. It is estimated that 1,027 new employees will be needed by 1969 as replacements and new personnel. Since practically all of these employees will be college degree people and considering that the businesses discussed in the preceding sections will need about eight hundred college trained personnel, this indicates an annual demand of approximately four hundred college graduates in agriculture in the businesses and organizations covered in this study.

Number Currently Employed		Number Needed by 1969			
Full-Time	Part-Time	Replacements		Additions	
		Full-Time	Part-Time	Full-Time	Part-Time
1,943	73	759	100	161	7

Minimum and Maximum Entry Age

The minimum average age at which a person may enter these professional agricultural occupations is 26 with the range being from 22 to 30. Some training positions are available which have a minimum entry age of 18 years. The average maximum age for job entry with the organizations interviewed is 46 years and a range of 40 to 50 years reported.

Education Required

The vast majority of these jobs (90%) require a baccalaureate degree or above for job entry and advancement. Ten percent of these professional jobs require only some college but the trend is toward more education rather than less as an employment requirement. The following chart illustrates the level of education required in this category of employment.

Educational Level Required	Percent of Jobs Requiring this Level
Some College	10
College Degree	60
College Degree Plus 18 Hours	2
Master's Degree	14
Doctor's Degree	14

Beginning and Maximum Salaries

Salaries in these professional agricultural occupations vary somewhat depending upon the level at which the individual is working and the administrative duties connected with the job. The following table shows the range of beginning and maximum salaries at these various levels.

Area of Work	Beginning Range	Maximum Range
Trainee	$4,000 - 5,000	
Fieldman	3,720 - 5,280	$ 5,880 - 7,800
Local (Public)	5,600 - 7,200	7,500 - 11,400
Local (Private)	7,200	12,300
County	5,000 - 7,200	11,000 - 11,700
District	6,000 - 11,400	11,300 - 14,170
State (Employee)	5,000 - 8,400	7,000 - 15,000
State (Administration)	7,200 - 12,000	10,200 - 20,000

CONCLUSIONS AND IMPLICATIONS

Studies of employment opportunities and training needs in off-farm agricultural occupations have been conducted in 26 states. Results of this study in Oklahoma and the studies in other states should give direction to local and state departments of vocational agriculture in planning new courses or in redesigning present courses. The training needs of agriculture--both production and business--have clearly become the responsibility of vocational agriculture and these studies which have been made should be valuable aids in curriculum planning and course construction.

Many of the people working in off-farm agricultural businesses need competencies in agriculture. Many of these competencies can be taught in high school vocational agriculture classes, while many will require education beyond the high school level. Employers expect an increase in the number of agriculturally competent employees in the next few years, and many will be looking to vocational agriculture to provide the training in agriculture.

Employers interviewed were almost unanimous in their desire for employees with training in human relations, communication, salesmanship, and safety. The need for training in the various fields of agriculture such as plant and soil science, animal science, agricultural mechanization, and agricultural business management was determined by the type of business and the level of employment being considered. Any program designed to train young men for employment in off-farm agricultural business should aim at increasing the students' abilities in this general area of employee traits as well as more specific instruction in the areas of agriculture which seem to be indicated.

A majority of the employment opportunities in off-farm agriculture are in the larger centers of population in Oklahoma. Considering this and the mobility of our population, it seems evident that our training programs in vocational agriculture must prepare students for employment opportunities which may be greater than the needs of the local community. Programs of instruction in vocational agriculture should be based on the needs and aspirations of the local students rather than the needs of the local community. Although most students may be trained for entry level employment many will advance to positions of leadership in agricultural industry.

More precise information is still needed to guide supervisors and teachers in program planning. Further research is indicated in the following areas:

1. A procedure for keeping informed on the needs and opportunities in production agriculture and agricultural business.
2. Determination of the most efficient method or combination of methods of training for employment in off-farm agriculture.
3. Detailed descriptions of the more important job titles in off-farm agricultural businesses.
4. Study of other businesses which may offer employment opportunities to people trained in agriculture.
5. A clear definition of what should be taught at the various levels of our educational system--high school, post high school, and college.
6. A re-definition of what is meant by agricultural competencies which includes agricultural business competencies as well as production competencies.